REMARKS

Reconsideration and allowance are requested.

The claims have been amended to overcome the Examiner's objections and to clarify in claims 2, 4, and 12 that the known symbols are inserted between the "parts of the layers" rather than between the layers themselves. Claims 8 and 18 are canceled. Withdrawal of the claim objections are requested.

The Examiner rejects claims 1, 7, 9-11, 17, 19, and 20 for anticipation based on Lindskog et al. This rejection is respectfully traversed.

To establish that a claim is anticipated, the Examiner must point out where each and every limitation in the claim is found in a single prior art reference. *Scripps Clinic & Research Found. v. Genentec, Inc.*, 927 F.2d 1565 (Fed. Cir. 1991). Every limitation contained in the claims must be present in the reference, and if even one limitation is missing from the reference, then it does not anticipate the claim. *Kloster Speedsteel AB v. Crucible, Inc.*, 793 F.2d 1565 (Fed. Cir. 1986). Lindskog fails to satisfy this rigorous standard.

Lindskog discloses a system to achieve an increased diversity when transmitting a signal d(t), which is divided into two equally sized parts $d_1(t)$ and $d_2(t)$. The transmitted frame is divided into two blocks, and known symbols are introduced between the two blocks as illustrated in Figure 7. But Lindskog does not disclose transmitting multiple different signals since $d_1(t)$ and $d_2(t)$ belong to the same signal d(t). Each part $d_1(t)$ and $d_2(t)$ contains a corresponding part that is created simply by time reversal and complex conjugation of that same part. See Figure 5. A first block in the symbols transmitted from a first antenna contains the first part $d_1(t)$ followed by known symbols and a second block containing the complex-conjugated, time-reversed second part $-d_2^*(N-t)$. For the second antenna, the first block in the symbols transmitted contains the

second part $d_2(t)$ followed by known symbols and a second block containing the complex-conjugated, time-reversed first part $d_1^*(N-t)$.

Regarding the first step in of claim 1, "using a diagonally layered multi-antenna transmission utilizing a number of multiple layers, each layer including a different sequence of symbols," Lindskog only describes a single sequence of symbols d(t). Each layer in Lindskog only includes part of the same symbol sequence d(t). Nor does Lindskog disclose that "the different sequence of symbols of each layer is divided into a first number of multiple sub-sequences of layers, the first number of multiple sub-sequences of layers being a multiple of the number of multiple layers." There is just one sequence of symbols d(t), with parts of d(t) being distributed to the two layers. All of those parts $d_1(t)$, $d_2(t)$, $d_1^*(N-t)$, and $-d_2^*(N-t)$ are just that—parts of the same sequence of symbols d(t). In contrast, the independent claims are recite that each of multiple different sequence of symbols "of each layer is divided into a first number of multiple sub-sequences of layers, the first number of multiple sub-sequences of layers being a multiple of the number of multiple layers." These features are not disclosed or suggested by Lindskog.

The Examiner refers to paragraph [0064] in Lindskog which describes that the "time-reversal space-time block coding" can handle intersymbol interference and that it may be combined with transmit delay diversity. Lindskog's object is to double the diversity while maintaining the same transmission capacity. But as explained on page 7, line 25 and following, the claimed approach almost *doubles* the transmission capacity without the risk of inter-layer ISI. In contrast, Lindskog only transmits one sequence of symbols d(t) using two antennas rather than transmitting multiple different sequences of symbols at the same time using multiple antennas. His goal is to increase redundancy rather that increase the data rate. Rather than just transmitting

the parts of d(t) $d_1(t)$ and $d_2(t)$ using two different antenna, Lindskog increases the reliability of the transmission by generating a different form of the same data in the form of $d_1^*(N-t)$ and $-d_2^*(N-t)$ and transmits that as well. It is a good way to combat multi-path fading, but it does not increase the effective data rate. This difference in transmission capacity is plain evidence that Lindskog's teachings do not anticipate the claimed diagonally layered multi-antenna transmission. Withdrawal of the anticipation rejection is requested.

Claims 2-6 and 12-16 stand rejected under 35 USC 103 for obviousness based on Lindskog and Li. This rejection is traversed.

Li discloses a system for selectively introducing pilot symbols at predetermined tones in OFDM blocks. The words "channel memory" are not mentioned in Li so it is difficult to understand how Li remedies the admitted deficiency in Lindskog. Withdrawal of this rejection is requested.

New claims 21 and 22 further recite that the sequence of symbols is divided by separating the symbols in the first number of multiple sub-sequences of layers. Lindskog creates a corresponding part having the same information as $d_1(t)$ and $d_2(t)$, respectively, before transmission (see Figure 7). But Lindskog does not divide the sequence of symbols into two multiple sub-sequences of layers by separating the sequence of symbols into separate sub-sequences containing different information.

The new set of apparatus are distinguishable from Lindskog along and in combination with Li for reasons presented above.

The application is in condition for allowance. An early notice to that effect is requested.

Respectfully submitted,

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